IN THE DRAWINGS

Replacement drawing pages are attached with corrected Figures 1 and 5. The replacement sheets are properly marked as "Replacement Sheets." No new matter is added.

REMARKS

Claim Rejection under 35 USC § 101

Claim 7 has been amended to embody the invention in a tangible form.

Claim Rejection under 35 USC § 112

Examiner has rejected claims 1 and 2 and the claims dependent therefrom for not clearly and concisely defining the invention in a manner which can be carried out by one skill in the art. In relation to claim 1 the examiner does not believe that the specification describes how to form the outputs K1 and K2 of the controller from the bit stream pointed out at a particular shift register Rk as another input of the input to the corresponding MUX. Applicant submits that figures 1 and 5 and paragraphs [0032] and [0036] of the specification describe the referenced features in a way sufficient to be understood by the skilled addressee. Specifically, the controller is a shift register having k memory elements R1 – Rk. It is clear from figure 5 that the controller outputs K1 and K2 are taken from the output of any one of the memory elements. The selection of which memory element output is used for the outputs K1 and K2 is arbitrary. The controller outputs are second inputs to the MUXs (switches) for selecting the MUX outputs.

Claim 2 is rejected for lacking antecedent basis for the term "first generator." The claim has been amended to recite "first nonlinear function generator" and "second nonlinear function generator"

Claim Rejections under 35 USC § 103

Claims 7, 8 and 9 are rejected as being unpatentable over Roth in view of Beker. Claims 1 to 6 and 10 are rejected as unpatentable over Beker in view of Roth and in view of Puhl. Claims 1, 2 and 7 are independent claims. Claims 3 to 6 are dependent upon claim 2. Claims 8 to 10 are dependent on claim 7.

The examiner's position is that claims 1 and 2 are unpatentable because it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Roth with the system of Beker and then further with the teachings of Puhl.

The examiner's position is that figure 1 of Beker shows a first switch and figure 3 of Beker shows a second switch (a MUX being equivalent to a switch). However, there is only one switch (MUX) in the system of Beker. The figures 1, 2 and 3 of Beker are not cumulative, but are variants of the same system which is an arrangement of logic gates used to construct a linear feedback shift register. The logic gates are connected to a single multiplexer (M). Thus, Beker does not disclose first and second switches.

The examiner's position is that figure 1 of Beker shows a plurality of linear feedback shift registers and figures 1 and 3 of Beker also show a controller including a shift register operable to control the first and second switches. The examiner argues that the controller of figure 1 is on the left and the controller of figure 3 is at the top. The examiner is confused. In figure 1 the group of logic gates at the top form a first linear feedback shift register (LFSR T) and the group of logic gates on the left form a second linear feedback shift register (LFSR S). Figure 1 can therefore not show a plurality of linear feedback shift registers and a controller as this requires at least three elements when only two elements are present in that drawing. Again figure 3 cannot be additional to figure 1 to disclose the additional element as figure 3 is clearly described as an alternative in the description. According to the description at the top of column 4 of Beker figure 3 shows only one linear feedback shift register comprising the two rows of logic gates at the top of figure 3. Thus figure 3 only comprises a multiplexer and one other element and so cannot disclose a plurality of linear feedback shift registers and a controller.

Thus, the combination of Beker with both Roth and Puhl cannot disclose every element of claims 1 and 2 as believed by the examiner.

The examiner is further of the view that Beker does not teach a plurality of nonlinear functions, but that Roth teaches a plurality of nonlinear function having a binary sequence as their input. The output from the linear feedback shift registers is summed in the sigma block to form a signal output. However, the Applicant can see no motivation in either Roth or Beker for combining the teachings, nor any expectation of success in doing so. Insufficient information is given in Beker and Roth to combine the teachings successfully in the way required by the claim.

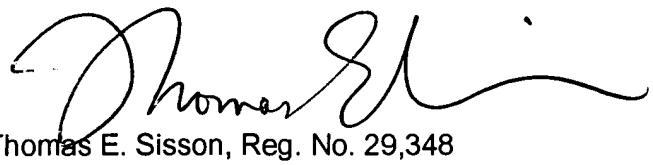
At the bottom of column 1 lines 63 to 68 Beker requires that during normal running the last stage in each shift register is applied to the input of the first stage in a re-circulating loop. The multiplexer has connections to various intermediate states of the shift register. Thus, it would not be clear to the skilled-addressee at which stage the nonlinear function should be applied in order to generate the second plurality of binary sequences, nor where the second plurality of binary sequences is selected by a multiplexer. Substantial alteration of the system of Beker would be required to accommodate the teachings of Roth.

Claim 7 is rejected for being unpatentable over Roth in view of Beker. The examiner's position is that Roth teaches all of the elements of the claim except selecting an output sequence from one of the plurality of binary sequences, but that Beker teaches this in Figure 1. Claim 7 recites "randomly selecting an output sequence from one of the second plurality of binary sequences." Beker does not disclose randomly selecting an output sequence. Beker discloses applying the output sequence from each shift register to the input of the first stage in a re-circulating loop [column 1 lines 63 to 68]. Thus, the combination of Beker and Roth does not disclose every element of claim 7.

All the dependent claims are novel and patentable over Beker, Roth and Puhl for the same reasons.

The Applicant asks the Examiner to reconsider the amended claims and the arguments presented. Further, the specification has been amended at paragraphs 5 and 33. However, the mathematical notation given is correct. The value 3.1416 (pi) is represented by the lower case Greek character π. The upper case Greek character Π given in the specification is mathematical notation for "the product of" and so the phrase reads the product of the function (in brackets) from i to n. Finally, two sheets of amended drawings have been submitted for the Examiner's consideration.

Respectfully submitted,
JACKSON WALKER L.L.P.



Thomas E. Sisson, Reg. No. 29,348
112 E. Pecan Street, Suite 2100
San Antonio, Texas 78205
Phone: (210) 978-7700
Fax: (210) 978-7790
Attorneys for Applicant

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited on the date shown below with the United States Postal Service, with sufficient postage as First Class Mail (37 CFR 1.8(a)), in an envelope addressed to Mail Stop: RESPONSE/NO FEE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

Date: Dec. 7, 2005

Shirley McIntyre

4114294v.1